175 Nipple Discharge

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Definition

Nipple discharge is the passage of liquid material through the nipple either spontaneously or with manipulation of breast tissue.

Technique

Important history to elicit from the patient is bilaterality or unilaterality of the discharge and association with other symptoms, such as mass, pain, skin or nipple changes. A careful gynecologic history should be obtained, including recent pregnancies, contraceptive use, menstruation abnormalities and past breast biopsies, infections, or cancers. It is crucial to ask the patient about current drug usage and local irritative factors to the nipples (e.g., chest trauma or breast manipulation). A systematic, thorough palpation of both breasts and axillary regions with nipple examination and expression of the discharge should always be conducted. Cytologic examination, occult blood testing, and Wright staining of the discharge are suggested.

Basic Science

The human breast has a tubuloalveolar structure and consists of 15 to 25 lobes radiating from the nipple. Each lobe is subdivided into lobules from which emerge lactiferous ducts. True discharge comes through mammary ducts out the nipple and may be noted to drain spontaneously and stain clothing, or may be elicited by segmental palpation of breast tissue. Differentiation of the seven basic types of nipple discharge can be determined by observation of the color of discharge, palpation of discharge to determine texture, and smear examination of discharge with Wright's stain to see if pus or blood is present.

Clinical Significance

Discharge from the breast is an abnormal finding except in late pregnancy or the postpartum period. There are seven basic types of nipple discharge, each of which can be associated with specific clinical conditions.

- Milky—white discharge; fat globules sometimes observed under microscopy
- Multicolored gummous—sticky discharge
- Purulent—pus with WBCs observed under microscopy
- Watery—colorless discharge
- Serous—faintly yellow, thin discharge
- Serosanguinous—thin, clear discharge with pink tint, RBCs observed under microscopy
- Bloody

Milky Discharge

Galactorrhea, or nonpuerperal lactation, usually results from multiple duct discharge from both breasts. The etiology of galactorrhea can be classified in terms of prolactin abnormalities. Galactorrhea associated with high prolactins can be caused by failure of the normal hypothalamic inhibition of prolactin release, enhanced prolactin-releasing factor, or autonomous or ectopic prolactin-releasing factor.

Lesions in the hypothalamus, pituitary stalk section or drugs that influence the central nervous system can decrease the inhibitory dopaminergic control of prolactin. Common drugs interfering with prolactin inhibition are psychotropic drugs (butyrophenones, phenothiazines), antihypertensives (reserpine, alpha-methyldopa), cannabinoids and opiates (marijuana, morphine, heroin), contraceptives, and metoclopropamide.

A physiologic enhancement of prolactin release is caused by thyrotropin releasing hormone (TRH). Primary hypothyroidism resulting in increases of TRH can cause prolactin release and galactorrhea that can be cured by thyroid hormone replacement.

Three types of pituitary tumors may be associated with galactorrhea: pure prolactin-secreting tumors (micro- or macroadenoma), mixed tumors that secrete both growth hormone and prolactin, and chromophobe adenomas. Prolactin can also be rarely secreted by other malignancies, such as bronchogenic carcinoma, hydatidiform moles, choriocarcinomas, and hypernephromas.

The majority of patients with galactorrhea will have normal prolactins. In a series of 235 women with galactorrhea, 32% had idiopathic galactorrhea with normal prolactins. Irritative nipple stimulation or breast manipulation can cause galactorrhea with mildly elevated or normal prolactins. One-third of normal nonpostpartum women will raise serum prolactin after repetitive breast stimulation. Postpartum women can lactate with normal ovulatory function for one or more years following pregnancy, especially with breast manipulation.

Multicolored and Sticky Discharge

Duct ectasia or comedomastitis can produce a multicolored, sticky discharge that is commonly bilateral in the perimenopausal woman. It begins as a dilation of the terminal ducts with an irritating lipid fluid collecting and producing an inflammatory reaction resulting in discharge from the nipple. Duct ectasia is most frequently associated with pain, itching, and swelling in the nipple. Palpation of the areola

can often reveal a tubular mass, reflecting the dilated ducts. Often a history of nipple manipulation can be elicited. If the disease progresses, a mass can develop (plasma cell mastitis) that can mimic cancer. Surgery is indicated only if a mass forms or the discharge changes to serosanguinous or bloody.

Purulent Discharge

In patients with acute puerperal mastitis, chronic lactation mastitis, central breast abscesses, or plasma cell mastitis, pus can be discharged, usually unilaterally. Breast cultures and smears may reveal an organism responsible. Abscess formation usually requires incision and drainage if appropriate antibiotics and local soaks do not have effect. It is important to remove a portion of an abscess wall for histologic study to rule out the possibility of an underlying cancer with secondary necrosis and infection.

Watery, Serous, Serosanguinous, and Bloody Discharges

The most common cause of these discharges is intraductal papillomas, but fibrocystic disease, advanced duct ectasia, cancer of the breast, and vascular engorgement in near-term pregnancy can also be causative. In a series of 370 patients with watery, serous, serosanguinous, or bloody discharge, 13.5% had cancer, 50.3% had intraductal papillomas, 31.1% had fibrocystic disease, and 5.1% had advanced duct ectasia. In patients over the age of 50, malignancy becomes increasingly common, especially if the discharge is unilateral and associated with a mass. Surgical exploration is mandatory in the group of patients with this type of discharge, even if cytologic and mammographic findings are negative.

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